cardiac complications ($p = 0.043$; OR 1.08), infections ($p < 0.001$; OR 1.6), neurologic ($p < 0.001$; OR: 1.26) and renal complications ($p < 0.01$: OR 1.13). In addition CAS was independently associated with a 20 % lower incidence of routine discharges ($p < 0.001$) and incurred higher hospital charges by $18,992 ($p < 0.001$).

Conclusions: Although CAS is performed in patients with higher Co-morbidity scores; it is independently associated with higher mortality, morbidity and hospital charges despite risk adjustment. CEA continues to be performed with very low morbidity and mortality despite CAS being in vogue for the past 10 years. These factors do not justify expanding the indication of CAS to include low risk cases that would be better served by open CEA and may represent a prolonged learning curve.

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PS68.

Carotid Endarterectomy in Diabetic Patients: Are the Results Worth the Effort?

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Objectives: To evaluate results of carotid endarterectomy (CEA) in diabetic patients in a large single center experience

Methods: Over a 13-year period ending in December 2008, 4304 consecutive CEAs were performed. Interventions were performed in diabetic patients in 882 cases (20.5%, Group 1) and in non diabetics in the remaining 3422 (79.5%, Group 2). Early results in terms of 30-day stroke and death rates were analyzed and compared. Follow-up results were analyzed with Kaplan Meyer curves and compared with log-rank test.

Results: There were no differences between the two groups in terms of preoperative clinical status or degree of carotid stenosis on the operated side. Combined 30-day stroke and death rate was significantly higher in group 1 (2%) than in group 2 (0.9%; $p = 0.006$). At univariate analysis, perioperative risk of stroke and death in diabetic patients was significantly impaired by the use of instrumental cerebral monitoring in comparison with clinical one (95% CI 0.9-39.9, OR 5.9, $p = 0.01$), and this was also at multivariate analysis (95% CI 1.1-23.1, OR 8.3, $p = 0.04$). Follow-up was available in 96.5% of patients with a mean duration of 40 months (range 1-166). There were no differences between the two groups in terms of estimated 7-year survival and stroke-free survival. Diabetic patients had poorer 7-year severe (>70%) restenosis-free survival rates than non diabetics (77.4% and 82.2%, respectively; $p = 0.05$).

Conclusions: In our experience the presence of diabetes mellitus twofold increases perioperative risk of CEA, which however remains largely below the recommended standards. During follow-up this differences becomes negligible. In diabetics, cerebral clinical monitoring may be preferred whenever possible.

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PS70.

Carotid Artery Plaque Burden and Calcification in ≥ 50% NASCET Stenosis in Relation to Symptomatic Outcome

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Objectives: Carotid arteriography provides an accurate assessment of luminal narrowing but may inherently fail in assessing plaque burden, composition, and structure. In this study we investigate whether a) carotid plaque burden correlates with NASCET stenosis and b) quantitative measures of in vivo carotid plaque burden and calcification are different in symptomatic and asymptomatic patients.

Methods: High resolution CT arteriograms and maximum intensity projection (MIP) reconstructions of carotid artery stenoses (n = 56) with ≥ 50% stenosis were quantitatively analyzed using NIH ImageJ (19 symptomatic, i.e., ipsilateral TIA, stroke, or AF within 6 months). NASCET stenosis was calculated utilizing MIP reconstructions and the corresponding plaque burden and calcification were derived from axial images of the distal common and internal carotid segments. Atherosclerotic risk factors and statin use were defined for each subject.

Results: For ≥ 50% ICA stenoses a highly significant correlation was found between carotid plaque burden, expressed as a percentage of the absolute total area of the diseased carotid artery segment and NASCET stenosis ($r = 0.8$, $p < 0.001$). Plaque burden was found to be significantly greater in symptomatic vs asymptomatic patients (73.8 ± 2.0 vs 60.9 ± 2.5, $p = 0.001$). Carotid plaque calcification was significantly lower in symptomatic carotid segments (1 ± 0.5 vs 13.8 ± 1.5, $p < 0.0001$). Results expressed as mean ± SE.

Conclusions: NASCET lumenal stenosis accurately reflects the degree of carotid plaque burden. More importantly, for ≥ 50 % ICA stenosis, symptomatic patients harbor a greater plaque burden with a minimal degree of plaque calcification when compared to asymptomatic patients. These results indicate that, in addition to the

NASCET stenosis, assessment of carotid plaque volume and calcification are important variables to be considered in outcome studies and in selecting appropriate management of hemodynamically significant asymptomatic carotid disease.

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PS72.

Post Carotid Endarterectomy Hyperperfusion Syndrome- Is It Predictable by Lack of Cerebral Reserve?

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Objectives: Cerebral hyperperfusion syndrome (HS) is presumed to be due to an increase in post endarterectomy flow in patients with fixed cerebral vascular reserve. Severe headache is thought to be an early sign of possible HS. An increase in pCO2 is known to cause cerebral vasodilatation and is used to evaluate the presence of cerebral reserve.

Methods: 45 patients undergoing carotid endarterectomy (CE) had internal carotid artery (ICA) flow measured with a transonic flow probe. F1-immediately after full dissection of the ICA, F2 - after 30 seconds of breath holding and F3 - after restoration of flow. Δ F2-F1 and Δ F3-F2 were evaluated. A 10% increase between F2 and F1 indicated normal cerebral reserve and between F3 and F2 indicated increased postoperative flow. Age, sex, medical comorbidities, indication for CE, intraoperative cerebral oximetry values and percentage of bilateral carotid stenosis were recorded. All patients were contacted after disharge about the presence of postoperative headache or other suggestions of hyperperfusion syndrome. Fisher's exact test was used for categorical predictors and the rank-sum test for continuous predictors.

Results: 7 patients (group A) (16%) developed postoperative headache and 38 (Group B) did not. No patients developed hyperperfusion syndrome. No variables were associated with postoperative headache except female gender ($p = 0.005$). There were no statistically significant differences in F1, F2, F3 and ΔF (F2-F1, or F3-F2) between groups A&B. There was no descriptively significant Δ F2-F1 in 17 patients. Only 1 of the 7 patients who had no change between F2 and F1, and who had a significant increase in F3, and who were thought to be at higher risk for HS, developed a postoperative headache.

Conclusions: Lack of cerebral reserve is common in patients undergoing endarterectomy. If headache is an early sign of hyperperfusion it does not appear to be predicted by lack of cerebral reserve and increase in post endarterectomy flow.

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PS74.

Coronary Bypass and Carotid Endarterectomy (CEA): Does a Combined Operative Approach Offer Better Outcome? - Outcome of Different Management Strategies in Patients With Carotid Stenosis Undergoing Coronary Artery Bypass Grafting (CABG)

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Objectives: The management of patients with coronary artery disease (CAD) and concurrent asymptomatic carotid stenosis requiring revascularization remains controversial. We conducted this study to better understand the demographics, hospital course, and treatment outcomes for patients with CAD and moderate to severe carotid stenosis who received different treatment strategies.

Methods: The hospital records for patients undergoing CABG with moderate to severe carotid stenosis were retrospectively reviewed at two hospitals over a 14-year period. Two strategies were used, one at each hospital, consisting of CABG-alone or CABG-CEA. The two groups were compared by variables of demographics, preoperative assessment, comorbidities, and treatment outcomes. Multivariate regression analysis were conducted to further examine the risk factors for stoke or mortality, and their association with treatment strategy while controlling covariates.

Results: Among 263 patients, 120 received CABG-alone and 143 CABG-CEA. The demographics, hospital course, and treatment outcomes between the two groups were comparable except the CABG-alone group had a higher incidence of current congestive heart failure (CHF) rate (22% v.11%, $p = 0.02$), a lower COPD rate (21% v.37%, $p = 0.004$), and a lower Canadian Cardiovascular Society Functional Class score (2.85 v.3.57, $p < 0.001$) when compared with the CABG-CEA group. Of the entire cohort, renal failure (RF), respiratory failure (ResF), and gastro-intestinal bleeding/perforation/infarction (G-IB) were associated with perioperative stroke; whereas only RF associated with overall in-hospital stroke. Mortality was associated with CHF, RF, ResF, G-IB, and perioperative stroke. 4.2% of all patients suffered in-hospital stroke, and 2.3% death. Multivariate logistic regression showed no difference in any adverse outcome between the two groups.

Conclusions: This study was unable to demonstrate the superiority of either approach in the management of patients with combined coronary and cerebrovascular disease.

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